

Claims

1. A recombinant polyketide synthase gene that encodes a loading module comprising a KSQ domain, an AT specific for ethylmalonyl CoA, and an ACP domain.

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2. A host cell that comprises the recombinant polyketide synthase gene of Claim 1, wherein said host cell further comprises a recombinant gene selected from the group consisting of recombinant *ccr* and *icm* genes.

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3. A method for the production of 14,15-propenylerythromycin and/or the corresponding 14,15-propenyl-6-deoxyerythronolide B, which comprises culturing a recombinant host cell that expresses isobutyryl CoA mutase, valine dehydrogenase, butyryl CoA dehydrogenase, and 6-deoxyerythronolide polyketide synthase.

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4. The method of Claim 3, wherein said host cell is a *Saccharopolyspora erythraea* host cell.

5. The method of Claim 4, wherein said host cell does not express a functional *eryM* gene product.

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6. The method of Claim 3, wherein said butyryl CoA dehydrogenase is expressed from a gene isolated from *Clostridium acetobutylicum* or *Mycobacterium tuberculosis* (*fadE25*).